

ABSTRACT OF THE DISCLOSURE

Methods of probing a material under investigation using an ultrasound beam.

Echolocation data is generated using a multi-dimensional transform capable of using phase and magnitude information to distinguish echoes resulting from ultrasound beam

5 components produced using different ultrasound transducers. Since the multi-dimensional transform does not depend on using receive or transmit beam lines, a multi-dimensional area can be imaged using a single ultrasound transmission. In some embodiments, this ability increases image frame rate and reduces the amount of ultrasound energy required to generate an image.